(FILE 'HOME' ENTERED AT 15:54:30 ON 25 NOV 2002)

FILE 'MEDLINE, CAPLUS, BIOSIS' ENTERED AT 15:54:46 ON 25 NOV 2002

L1 36 S CD11D
L2 10 S L1 AND PROMOTER
L3 4 DUP REMOVE L2 (6 DUPLICATES REMOVED)

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L3 ANSWER 1 OF 4 MEDLINE
ACCESSION NUMBER: 2002669178 IN-PROCESS
DOCUMENT NUMBER: 22316928 PubMed ID: 12429998
TITLE: Expression of the myeloid-specific leukocyte integrin gene **CD11d** during macrophage foam cell differentiation and exposure to lipoproteins.
AUTHOR: Noti John D
CORPORATE SOURCE: Laboratory of Molecular Biology, Guthrie Research Institute, Sayre, PA 18840, USA.. jnoti@inet.guthrie.org
SOURCE: INTERNATIONAL JOURNAL OF MOLECULAR MEDICINE, (2002 Dec) 10 (6) 721-7.
Journal code: 9810955. ISSN: 1107-3756.
PUB. COUNTRY: Greece
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)
LANGUAGE: English
FILE SEGMENT: IN-PROCESS; NONINDEXED; Priority Journals
ENTRY DATE: Entered STN: 20021114
Last Updated on STN: 20021114

AB The leukocyte integrin gene **CD11d** is expressed predominately on subsets of the myelomonocytic lineage (myeloid cells), particularly on macrophage foam cells and splenic red pulp macrophages. Its expression pattern clearly differs from myeloid-specific leukocyte integrins CD11b and CD11c and the leukocyte-specific integrin CD11a. Although the functions of **CD11d** have not been determined in any detail, its expression in these cell types suggests that it may play a role in the atherosclerotic process. To better understand how this gene is regulated, the steady-state level of **CD11d** mRNA in differentiating bone marrow CD34+CD38- cells, peripheral blood monocytes, and monocytic cell lines was assessed by Northern blot analysis and RT-PCR and compared with those of CD11a, CD11b, and CD11c. Expression of **CD11d** occurs early in CD34+CD38- cells, rises, and then decreases, in contrast to the expression of the other leukocyte integrins. Expression of **CD11d** reappears in peripheral blood monocytes differentiating to macrophage foam cells. Oxidized lipoproteins (OxLDL) and acetylated lipoproteins (AcLDL) failed to upregulate **CD11d** following differentiation of peripheral blood monocytes or the monocytic cell line HL60. However, when both OxLDL and AcLDL were present during differentiation, **CD11d** was further upregulated. This suggests that expression of **CD11d** is coordinately regulated with expression of LDL receptors and the development of the foam cell. Site-directed mutagenesis of the -100 to -20 region of the **CD11d promoter** revealed transcription factor binding sites essential for expression of this gene. Decoy oligonucleotides to the -100 to -20 region taken up by CD34+CD38- cells block their differentiation into myeloid colonies. This suggests that one or more transcription factors that regulate **CD11d** also are essential for myeloid differentiation, and that the **CD11d promoter** may be used as a model gene to identify transcription factors essential for myeloid cell differentiation.

L3 ANSWER 2 OF 4 MEDLINE DUPLICATE 1
ACCESSION NUMBER: 2001667588 MEDLINE
DOCUMENT NUMBER: 21570139 PubMed ID: 11713605
TITLE: The leukocyte integrins are regulated by transcriptional and post-transcriptional mechanisms in a leukemic cell that overexpresses protein kinase C-zeta.
AUTHOR: Noti J D; Reinemann B C; Johnson A K

CORPORATE SOURCE: Laboratory of Molecular Biology, Guthrie Research Institute, Sayre, PA 18840, USA.. jnoti@inet.guthrie.org
CONTRACT NUMBER: [redacted]01 HL63891-01A2 (NHLBI)
SOURCE: INTERNATIONAL JOURNAL OF ONCOLOGY, (2001 Dec) 19 (6) 1311-8.
Journal code: 9306042. ISSN: 1019-6439.
PUB. COUNTRY: Greece
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)
LANGUAGE: English
FILE SEGMENT: Priority Journals
ENTRY MONTH: 200203
ENTRY DATE: Entered STN: 20011120
Last Updated on STN: 20020324
Entered Medline: 20020322

AB Overexpression of protein kinase C-zeta (PKC-zeta) in the leukemic myeloid cell line U937 (U937-PKC-zeta cells), previously shown to induce leukemic cell differentiation, resulted in nearly complete downregulation of leukocyte integrins CD11a, CD11b, **CD11d**, and CD18, but not CD11c from the cell surface. The steady-state level of mRNAs for the downregulated leukocyte integrins was not detectable by Northern analysis.

Nuclear run-on analysis revealed that transcription of all the leukocyte integrin genes except CD11c was reduced 70-90% as compared to control U937-Vector cells [U937 cells transfected with the empty vector pSV2M(2)6]. Transfection analysis of CD11-**promoter**-luciferase constructs confirmed that transcription of the leukocyte integrin genes was drastically downregulated in U937-PKC-zeta cells. The two c-jun binding sites in the CD11c **promoter** were essential for continued expression of CD11c in U937-PKC-zeta cells. Additionally, the 3' untranslated region (3' UTR) from CD11b, when fused to the luciferase gene, lead to the destabilization of this chimeric mRNA in U937-PKC-zeta cells. This indicates that downregulation of CD11b expression in U937-PKC-zeta cells is also the result of reduced stability of CD11b mRNA.

Thus, overexpression of PKC-zeta in U937 cells leads not only to leukemic cell differentiation, but also to differential regulation of the leukocyte integrins.

L3 ANSWER 3 OF 4 MEDLINE DUPLICATE 2
ACCESSION NUMBER: 2000187620 MEDLINE
DOCUMENT NUMBER: 20187620 PubMed ID: 10722744
TITLE: Structural and functional characterization of the leukocyte integrin gene **CD11d**. Essential role of Sp1 and Sp3.
AUTHOR: Noti J D; Johnson A K; Dillon J D
CORPORATE SOURCE: Guthrie Research Institute, Sayre, Pennsylvania 18840, USA.. jnoti@inet.guthrie.org
SOURCE: JOURNAL OF BIOLOGICAL CHEMISTRY, (2000 Mar 24) 275 (12) 8959-69.
Journal code: 2985121R. ISSN: 0021-9258.
PUB. COUNTRY: United States
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)
LANGUAGE: English
FILE SEGMENT: Priority Journals
OTHER SOURCE: GENBANK-AF187881
ENTRY MONTH: 200004
ENTRY DATE: Entered STN: 20000505
Last Updated on STN: 20000505
Entered Medline: 20000427

AB **CD11d** encodes the latest alpha-subunit of the leukocyte integrin family to be discovered, and it is expressed predominantly in myelomonocytic cells. We have isolated a genomic clone that contains **CD11d** and showed this gene to be 11,461 bp downstream and oriented

in the same direction as the related CD11c gene. **CD11d** transcription begins 69-79 nucleotides upstream of the ATG codon. Transfection analysis of **CD11d**-luc reporter constructs revealed that the -173 to +74 region is sufficient to confer leukocyte-specific expression of luciferase in myelomonocytic cells (THP1 and HL60), B-cells (IM9), and T-cells (Jurkat). Transfection analysis showed that down-regulation of **CD11d** expression by phorbol ester was myelomonocyte-specific and is mediated by one or more cis-elements within the -173 to +74 region. In vitro DNase I footprint analysis and electrophoretic mobility shift analysis showed that Sp1 and Sp3 bind at -63 to -40. Deletion of the Sp-binding site significantly reduced **CD11d promoter** activity. Overexpression of either Sp1 or Sp3 in THP1 cells led to activation of the **CD11d promoter** even in the presence of phorbol ester, whereas down-regulation of either factor by antisense oligonucleotides decreased **CD11d promoter** activity. In contrast, overexpression of Sp3 in IM9 and Jurkat cells down-regulated **CD11d promoter** expression. In vivo genomic footprinting revealed that the -63 to -40 region is bound by a Sp protein in unstimulated HL60 cells but not in phorbol ester-stimulated HL60 cells. In contrast, this site is bound in both unstimulated and phorbol ester-stimulated IM9 and Jurkat cells. Together, these results show that myelomonocyte-specific phorbol ester down-regulation of **CD11d** is mediated through both Sp1 and Sp3.

L3 ANSWER 4 OF 4 MEDLINE DUPLICATE 3
ACCESSION NUMBER: 2000330757 MEDLINE
DOCUMENT NUMBER: 20330757 PubMed ID: 10871347
TITLE: CD43 gene expression is mediated by a nuclear factor which binds pyrimidine-rich single-stranded DNA.
AUTHOR: Farokhzad O C; Teodoridis J M; Park H; Arnaout M A; Shelley C S
CORPORATE SOURCE: Leukocyte Biology and Inflammation Program, Renal Unit, Massachusetts General Hospital, Harvard Medical School, Boston, USA.
CONTRACT NUMBER: PO1 AI28465 (NIAID)
PO1 DK43351 (NIDDK)
R29 DK50779 (NIDDK)
SOURCE: NUCLEIC ACIDS RESEARCH, (2000 Jun 1) 28 (11) 2256-67. Journal code: 0411011. ISSN: 1362-4962.
PUB. COUNTRY: ENGLAND: United Kingdom
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)
LANGUAGE: English
FILE SEGMENT: Priority Journals
ENTRY MONTH: 200007
ENTRY DATE: Entered STN: 20000728
Last Updated on STN: 20010521
Entered Medline: 20000718

AB CD43 is a leukocyte-specific surface molecule which plays an important role both in adhesion and signal transduction. We have identified a site spanning nucleotides +18 to +39 within the human CD43 gene **promoter** which in vitro is hypersensitive to cleavage by nuclease S1. Repeats of this region are sufficient to activate expression of a heterologous **promoter** in CD43-positive cell lines. Two nuclear factors, PyRo1 and PyRo2, interact with the hypersensitive site. PyRo1 is a single-stranded DNA-binding protein which binds the pyrimidine-rich sense strand. Mutation analysis demonstrates that the motif TCCCCT is critical for PyRo1 interaction. Replacement of this motif with the sequence CATATA abolishes PyRo1 binding and reduces expression of the CD43 **promoter** by 35% in Jurkat T lymphocytic cells and by 52% in the pre-erythroid/pre-megakaryocytic cell line K562. However, this same replacement failed to affect expression in U937 monocytic cells or in CEM T lymphocytic cells. PyRo1, therefore, exhibits cell-specific differences in its functional activity. Further analysis demonstrated that PyRo1 not

only interacts with the CD43 gene **promoter** but also motifs present within the **promoters** of the CD11a, CD11b, CD11c and **CD11d** genes. These genes encode the alpha subunits of the beta2 integrin family of leukocyte adhesion receptors. Deletion of the PyRo1 binding site within the CD11c gene reduced **promoter** activity in T lymphocytic cells by 47%. However, consistent with our analysis of the CD43 gene, the effect of this same deletion within U937 monocytic cells was less severe. That PyRo1 binds preferentially to single-stranded DNA and sequences within the CD43 and CD11 gene **promoters** suggests that expression of these genes is influenced by DNA secondary structure.

	Hits	Search Text	DBs	Time Stamp
1	0	CD11d with gene with promoter	USPAT; US-PGPUB; EPO; JPO; DERWENT	2002/11/25 15:47
2	0	CD11d with gene	USPAT; US-PGPUB; EPO; JPO; DERWENT	2002/11/25 15:47
3	3	CD11d	USPAT; US-PGPUB; EPO; JPO; DERWENT	2002/11/25 15:48
4	61	myeloid with promoter	USPAT; US-PGPUB; EPO; JPO; DERWENT	2002/11/25 15:48
5	0	l3 and l4	USPAT; US-PGPUB; EPO; JPO; DERWENT	2002/11/25 15:48